

IN THE CLAIMS

Cancel claims 1-17 without prejudice.

Claims 1-17 (Canceled)

18.(Currently Amended) A method of sensing temperature through intensity modulation of a light signal using an intensity modulating modulated and remote sensing optic fiber temperature switching immersion probe, said method comprising the steps of:

- (a) immersing the probe in a liquid container having a temperature below a the melting point of a the chemical;
- (b) recording a fixed value of an optical signal generated by transmission of the light signal through the chemical in a solid state and at the room temperature; and
- (c) detecting a the maximum optical signal generated by transmission of the light signal through the chemical at its melting point and in a liquid phase;
- (d) using detecting the optical signal be means of a photo-detector to detect the optical signal from the probe;
- (e) signal processing an output of the photo-detector by a signal processing circuit means of an electronic circuitry; and
- (f) enabling actuation of a relay dependent on the signal from the probe to at least one of stop a the heating process and or raise an alarm.

19.(Original) The method according to claim 18, wherein the liquid is selected from the group consisting of water, acetone, carbon tetrachloride and transformer oil.

20. (Currently Amended) The method according to claim 18, wherein the chemical is selected from selected from the group consisting of: oxalic acid, sodium chloride, paraffin wax and preferably acetamide.

21. (Currently Amended) The method according to claim 18, wherein the chemical has having a melting point in a the range of 75-85 °C.

22. (Currently Amended) The method according to claim 18, wherein the optical signal propagation in the probe is secure and without any cross talk or interference problems.

23. (Currently Amended) The method according to claim 18, wherein the optical signal in the probe is unaffected by the presence of electrical signals.

24. (Currently Amended) The method according to claim 18, further comprising the step of:

using wherein the said probe is used for remote sensing upto up to a distance of 1 km.

25. (Currently Amended) The method according to claim 18, wherein the said probe at an increased temperature provides an increase of six 6 times in an the output signal over the signal at the room temperature.

26. (Currently Amended) The method according to claim 18, wherein the chemical substance that is opaque at room temperature and becomes transparent at a predetermined given higher temperature enabling actuation of a relay to at least one of stop a the heating process and or raise an alarm.